

BHJ Products, Inc.

Parts List & Instructions

Rev. 9/2/2009

Product Name: **Compound Angle Piston Vise**

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BHJ Part#: **PV-1B**

Kit Contents:

1x Piston Vise Assembly

1x Fine Adjustment Attachment Assembly

1x Removable Vertical Protractor



Description

The Compound Angle Piston Vise is a high quality, precision piston-machining vise that can quickly and accurately be set for compound angles. The piston is held firmly yet delicately from the wrist-pin centerline. Location is determined both horizontally and vertically by V-jaws, thereby insuring very accurate, repeatable positioning of each piston. The Vise is equipped with heat treated V-Blocks for pin location and a soft aluminum V-Block for skirt protection. This assembly is mounted on a tilt/swivel base that is equipped with large, easy to read protractors for angle setup in both planes.

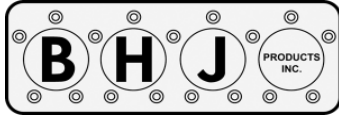
Caution:

- **Keep Hands And Fingers Out Of Potential Pinch Points When Making Adjustments.**
- **Tighten All Clamping Hardware For Your Safety And Rigidity When Using The Vise.**

SET-UP

Setting the Primary Angle

1. Loosen the six Allen bolts on the side links (three on each side) ¼-turn.
2. Loosen the two side link acorn nuts.
3. Insert protractor into end slot in base plate.



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4. Raise the hinged primary-angle plate to the approximate primary (vertical) angle as shown on the protractor and snug the acorn nuts and Allen bolts enough to hold the vise in place.

Setting the Secondary Angle

5. Loosen the Allen head pivot bolt in the center of the fixed jaw block ½-turn.
6. Loosen the two clamping bolts underneath the top clamp, which is located on the outer edge of the secondary-angle swivel plate.
7. Adjust the swivel plate to the desired angle, reading the protractor off the right edge of the top clamp, as viewed from the knob end of the fixture.
8. After achieving the correct secondary angle, tighten all the clamping hardware.

Fine Adjustment Attachment

Note:

- **The Fine Adjustment Attachment Is Designed For Adjustment Only, And As Such Is Not Intended For Support Of The Vise While Machining.**
 - **Keep Hands And Fingers Out Of Potential Pinch Points When Making Adjustments.**
 - **Tighten All Clamping Hardware For Your Safety And Rigidity When Using The Vise.**
9. The fine adjustment attachment can be clamped to either the primary-angle (tilt) plate or the secondary-angle (swivel) plate. The foot of the fine adjustment attachment can rest on either the vise base plate, or the machine table, as required by the positioning of the fixture. The threaded jackscrew should be kept as close to perpendicular to the machine table in both directions as possible. Pre-adjust the height of the fine adjustment attachment to fit the vise at its current angle. Rest the swivel foot in the appropriate location and tighten the Delrin Clamp Block **securely** on the vise.
 10. Loosen the two acorn nuts and six Allen bolts.
 11. Turn the fine adjustment knob to raise or lower the vise to the desired angle.
 12. After achieving the correct angle, tighten all the clamping hardware and remove the Fine Adjuster.